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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/537,670	06/06/2005	Franciscus Paulus Maria Budzelaar	NL02 1239 US	5151

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PHILIPS INTELLECTUAL PROPERTY & STANDARDS
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EXAMINER	
JEAN PIERRE, PEGUY	
ART UNIT	PAPER NUMBER
2819	

DATE MAILED: 03/22/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/537,670	BUDZELAAR, FRANCISCUS PAULUS MARIA	
	Examiner	Art Unit	
	Peguy JeanPierre	2819	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06 June 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-28* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-28* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *06 June 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *6/6/2005*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement filed on 6/8/2005 has been considered.

Specification

2. The specification has not been checked to the extent necessary to determine the presence of all possible typographical and grammatical errors. Applicant's cooperation is requested in correcting any errors he/she may become aware in the application.

3. The continuing data must be present in the first page of the application.

Claim Rejections - 35 USC § 112

4. Claims 1-28 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1 line 2, the term " VIN is within a working voltage range..." is unclear. It is read that VIN cannot be higher than the highest reference voltage or lower than the lowest reference voltage.

In claim 4, line 2, reference voltages...VM-1, VM, lack antecedent basis, reference voltages Vref+/- represent the boundaries of the reference voltages. Is VM an intermediate reference voltage? Please clarify.

In claim 6, line 1, the term " the multibit string " lacks antecedent basis; the range of Vin is unclear; line 3 (at page 17), in addition, the term the relative error lacks antecedent basis (same rejection for claims 13, 19, 26); furthermore, it is not clear how the pieces are discontinuously joined (same rejection for claims 13, 19, 26).

In claim 15, it is not clear whether "K" represents the number of linear flash analog to digital converter or Z1,...ZK represents the number of A/D converters(same rejection for claim 22).

In claims 1-28, the reference voltages VM-1, VM, the working range of the input signal, ℑVin, ℑVref, δV1, δVK, voltage ranges δ1/δ2 are not clearly defined; the relationship between the group of reference voltages and how they are applied and compared to the input voltage to generate the digital output is unclear. The range of the analog input signal with regard to the set and groups of reference voltages are not clearly set and defined in the claims. The claims as understood by the Examiner recites the comparison of a voltage input signal to a nonlinearly distributed reference voltages to generate a digital output. Please clarify.

The claims must be drafted in a clear and concise matter to help in determining Applicant's invention.

An art rejection of the claims as understood by the Examiner appears below.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1 and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Kohdaka (USP 4,990,917).

Kohdaha discloses in Figure 2 an analog to digital converter that is adapted to convert an input voltage (Vin) to a digital output. The input voltage is within of a lowest reference voltage (Vref-) and a highest reference voltage (Vref+). The reference voltages V1 to Vm are non-linearly distributed (see abstract; col. 2, lines 60-64). A plurality of comparators (n>3) associated with the plurality of reference voltages on a one to one basis that compares the input voltage and the associated reference voltage. An encoder which generates the final digital output based on the comparison result.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 2-7 and 9-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kohdaha (USP 4,990,917) in view of Katzenstein (USP 5,059,980).

Kohdaha discloses essential features of the claimed invention except for a linearly distributed reference voltages. Katzenstein discloses in Figure 3, a non-linear analog to digital converter. The converter comprises a plurality of comparators that are coupled to receive an input voltage and a reference voltage. The reference voltages as illustrated in Figure 4a are set to be nonlinear (log taps) or linear. That is some of the comparator will compare the input voltage to a nonlinear reference voltage and other comparators will compare the input voltage to a linear reference voltage (see col. 6, lines 61 to col. 7, lines 19) The analog to digital converter of of Katzenstein is adapted to convert high and

low magnitudes reference voltages. Therefore, it would have been obvious to one having ordinary skill in the art to modify the Kohdaba comparing the input voltage with nonlinear and linear reference voltages as taught by Katzenstein to increase accuracy and efficiency of the converter. It is to be noted that the nonlinear set of reference and the second set of linear reference voltages form a first analog to digital converter and a second analog to digital converter when they are compared to the input voltage. In addition, Katzenstein further discloses a calibration technique to compensate for errors (due to inaccuracy of the input and/or reference voltages) that are present in the digital output signal.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peguy JeanPierre whose telephone number is (571) 272-1803. The examiner fax phone number is (571) 273-1803.

Peguy JeanPierre
Primary Examiner